DOCUMENT RESUME

ED 297 524 EC 210 375

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TITLE A Content Analysis of the Research on Giftedness: How Well Are We Doing?
PUB DATE Apr 88
NOTE 26p.; Paper presented at the Annual Convention of the Council for Exceptional Children (66th, Washington, DC, March 28-April 1, 1988).
PUB TYPE Information Analyses (070) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Citation Analysis; Comparative Analysis; *Content Analysis; Creativity Research; Elementary Secondary Education; *Exceptional Child Research; *Gifted; Program Content; *Publications; Research Design; *Trend Analysis

ABSTRACT

A preliminary analysis of literature published in the area of gifted education from January 1975 to December 1986 sought to analyze its content and to discern trends in the types of research-based topics addressed. Eliminating duplicate citations, the study analyzed 2,680 citations from three databases: the Educational Resources Information Center (ERIC), Exceptional Child Education Resources (ECER), and Psychological Information Abstracts (PSYC). All general descriptors for the terms "gifted" and "creative" listed for each database were used. Studies were categorized by year, database source, type of publication, subject, and research- or nonresearch-based. Further analysis of the 870 research-based articles classified them by topic, type of research design, sample size, sample age level, and number of variables studied. Results indicated that 20 percent of the gifted literature was research-based. Non-research literature was most concerned with curricular and programmatic issues, while the research literature focused more on student-centered issues. Journal articles comprised 91 percent of the non-research-based publications, but only 51 percent of the research reports. The most common research designs were causal-comparative and correlational. The most frequently researched age level was elementary, comprising 46 percent of the research studies conducted. (Author/JW)

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A Content Analysis of the Research on Giftedness: How Well Are We Doing?

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A Paper Presented at the 66th Annual Convention of the Council for Exceptional Children, Washington, D.C., March, 1988.

EC 210 375

Running Head: CONTENT ANALYSIS

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Abstract

The purposes of this preliminary analysis of all gifted literature from 1975-1986 were to: (1) analyze its content; and, (2) discern trends in the types of research-based topics addressed. Results indicated that 20% of the gifted literature was research-based. ERIC provided the most variety in types of publications; ECER was the best search source for general articles on giftedness, whereas PSYC was the best search source for research-based publications. Non-research literature was most concerned with curricular and programmatic issues, while the research literature was more concerned with student-centered issues. Journal articles were found to comprise 91% of the non-research-based publications, but only 51% of the research reports. The most common research designs were causal-comparative and correlational. The most frequentlyh researched age level was elementary, comprising 46% of the research studies conducted.

A Content Analysis of the Research on Giftedness: How Well Are We Doing?

Nature of the Problem

Exactly ten years ago I went back to school to study for a second master's degree in gifted education. This was at a time when the University was increasingly involved in Special Education. In fact, when I asked for information about their "gifted program", I was informed that I shouldn't bother to apply because with only 150 openings and 1000 applicants there was no way that my application for gifted ed rather than learning disabilities would be accepted, unless some advisor would "take pity on me" and agree to take me on. I was so angered that I applied anyway and was pleasantly surprised when I was accepted and was assigned an advisor. Having already completed the coursework for one master's degree in gifted education in the 1960's, I was familiar with this professor's name and was just delighted to know he would be my advisor. Well, imagine my shock at our first meeting, when I asked him why he was no longer researching and writing in the field and he said, "I had to leave. The research being done was poor and I could not tolerate it." I have never forgotten this remark by a man I respect very highly, but I have never stopped trying since that day in 1978 to prove him wrong! I hope you did not come expecting me to tear our research efforts apart. True, there is much room for improvement, but we have made some creditable efforts as well.

In the past decade there has been increasing interest in the education of the gifted, as evidenced by an increasing number of publications and proportionately larger numbers of "gifted" articles in more traditional educational publications. In a recent issue of Gifted Child Quarterly (1986), concerns were raised about the quality and direction of research in the gifted field. It is obvious that my mentor is not the only person concerned with how well or poorly we are doing our research. That concern has been voiced since the very beginnings of American research on giftedness. Much has been written concerning the Terman Study, the first well-publicized research of those 1,528 little geniuses, begun in 1921. We know it is a remarkable longitudinal study with a remarkably low mortality rate among subjects, but we also have been told time and time again about its flaws, its disproportionate numbers of white males, its shaky foundations in making comparisons with government-published statistics for the "normal" population, the potential "Hawthorne Effect" and "Halo Effect" that may have influenced the behaviors of the sample as well as their researchers, and so on.

What is it about research on giftedness that causes researchers to be concerned with design strength and generalization? Part of this may lie in the fact that true experimental design, with randomization, does not fit in this field. We are studying a very unique, "carefully selected" population, only to be found to a comparatively rare degree at the upper end of an IQ continuum or performing beyond chronological expectations in a variety of domains. Our purpose in studying this population is not to prove that this quality of giftedness is normally

distributed but rather to quantify its degree of differentness. Thus, the traditionally acceptable research designs of psychology may not always be appropriate. James and Chen Lin Kulik were taken to task by Robert Slavin in 1984 for their meta-analysis of the research on ability grouping. The Kuliks had included all published studies in which equally bright gifted students either ability grouped or not, were compared on their achievement. Slavin argued that comparing achievement between matched pairs of high IQ students, one of whom has been ability grouped and one who has not, is not a reasonable comparison. He asks, "How did the high achievers find themselves in lower-track classes, especially in those studies where comparisons were made within the same school, unless they had other qualities besides their IQ, such as poor behavior, lower reading levels, or problems with perseverence and motivation, which may have had even more influence on their subsequent achievement than just the group to which they had been assigned?" Thus, if we side with Slavin, we can, perhaps, wipe out the several hundred studies reviewed on ability grouping by the Kuliks. However, there is the recent article of Slavin's, in which he has done what he calls a "Best Evidence Synthesis" on ability grouping, which may be no better in helping us to understand that research. To quote from this article in the Fall, 1987, issue of Review of Educational Research, Slavin wrote:

> This review focuses on research on comprehensive ability grouping at the elementary level, grouping arrangements that involve all students at particu-

> lar grade levels, except those assigned to special education. This excludes studies of special classes for the gifted and for low achievers. Gifted and special education programs may be conceived of as one form of ability grouping, but they also involve many other changes in curriculum, class size, resources and goals that make them fundamentally different from comprehensive ability grouping plans. Further, nonrandomized evaluations of gifted and special education/mainstreaming studies suffer from serious problems of selection bias that are less problematic in similar studies of comprehensive ability grouping plans. (297)

Now think about that for a minute...all high ability students' studies excluded from the analysis of research on ability grouping, because of the selection bias of those studies. To me there is a paradox here, but I will let you decide what you think. Slavin tells us our studies are inappropriately done because true randomization has not taken place. Yet researchers such as Bruce Shore (1986) and Margaret Anderson (1986) and William Foster (1986) argue in their respective ways that we in this field may need to start thinking in even smaller, less normally distributed samples if we are truly going to be able to answer questions about internal processing or problem solving strategy selection behaviors among gifted learners. Foster, for example, argues that the usual nomothetic, or numbers, methods should take a back seat to solid, idiographic investigation for a

couple of reasons: ONE, because the very nature of giftedness means that we are attempting to describe and explain the unusual, atypical and unique, and TWO, because our purpose in gifted research is to extend beyond knowledge for knowledge's sake to the educational applications of what we learn upon the psychosocial well-being of the individuals we are studying.

This study sought to answer a central question concerning the quantity versus quality of gifted research: **Is more better?** Specifically, the purpose of this preliminary content analysis was to search for trends in the kinds of research being currently conducted and the topics toward which research is being directed. As one superficially delves into gifted education publications, one if met with "all the right moves"; citations. correct APA style, and so on. On further study, however, too often the citations refer to think pieces or state of the art treatises, which later are assumed by the reader to be based on original research. There appears to be much confusion about what the actual research has and has not told us. With the tremendous upsurge in publications, the problem appears to be deepening and widening. Thus, it was imperative that a thorough analysis of the literature be undertaken to help clarify issues, describe research trends, and to make recommendations for further research. We may not come to any conclusions about how large our studies should be or what designs we should or should not use in today's presentation, but at least I hope we will have a clearer picture of how we have been asking our questions about giftedness.

Research Procedures and Major Findings

Next I would like to describe the procedure I used to conduct this content analysis of gifted research. In an effort to collect all articles written in the area of gifted studies in the United States over the past decade, four database searches were undertaken to cover the years, January, 1975, to December, 1986. A total of 3,220 citations were produced from the searches of the Educational Resources Information Center (ERIC), Exceptional Children Education Resources (ECER), and Psychological Information Abstracts (PSYC) databases. The fourth search of Child Development Abstracts yielded no additional citations, not already listed in one of the previous databases. All general descriptors for "gifted" and "creative" listed for each database were used in conducting this search. Since many publications are referenced by more than one of these databases, duplicated citations were eliminated, reducing the total citations to be analyzed to 2,680. These studies were then categorized by year, database source, type of publication, subject, and research or non-research base. Further analysis of the research-based articles (n=870) classified them by topic, type of research design, sample size, sample age level, and number of variables studied. Major finding number one, then, was that for the period 1975-1986, twenty percent of the citations were reports of research.

A systematic procedure was carried out for classifying each citation; likewise, a random selection of 10% of the citations, once classified were recoded to verify accurate coding. A 95% reliability rate was maintained. Each publication was first coded

for a single database, no matter in which of the three sources it was listed. In coding for database, ERIC was used for any article found in more than one database; consequently, any publications coded as ECER or PSYC were found only in those databases. Using this coding system for the 2,680 citations, it was found that 39% of the non-research citations (n=709) were from ERIC, 48% from ECER (n=876), and 12% from PSYC. A second major finding in this preliminary content analysis, therefore, was that ECER yielded the greatest number of general publications on gifted topics when there was no limitation set on a research base to the publication. When the research-based articles were coded by database source, however, ECER, accounting for 13% or 109 articles, was the least comprehensive, with PSYC containing the "lion's share" (72%, n=630) of the citations, followed by ERIC, with 15% or 131 research-based publications.

Insert Table One About Here.

Fifteen general topic categories were selected to classify the 2,680 citations. Table Two summarizes the categories and the numbers and frequencies of citations per category. A chi square analysis revealed that significantly more citations than expected were written concerning social/emotional development, program treatment, and curriculum quality, with significantly fewer publications on computers & technology, acceleration, teacher training, and early childhood than expected. A separate analysis of research-based citations alone indicated a distinct difference in the numbers of articles devoted to each of these topics. Table

Two also summarizes the breakdown of frequencies and percentages for these 870 publications. A chi square analysis revealed that a significant percentage of these articles dealt with cognitive characteristics, program treatment, and identification and testing. Thus, the third major finding of this analysis was that there were distinct differences in the topics addressed by research-based and non-research based literature. The general literature appeared to be more focused on curriculum and program development, while the research reports focused more on cognitive aspects, such as identification, cognitive and psychological characteristics, and program effects.

Insert Table Two About Here.

Coding for type of publication included six classifications: (1) journal; (2) government report; (3) conference paper; (4) state or school district report; (5) college or commercial press publication; and, (6) doctoral dissertation. In those cases in which a conference paper or state report was later developed into a journal article, the first publication of the study (usually the report or conference paper) was used for coding. Again, distinct differences were found in the frequencies and percentages of citations for each publication source when research-based publications were separated from the general literature. Table Three summarizes these differences. As can be seen, journals were a favored medium for both subsets of the body of literature, but beyond that, doctoral dissertations represented a second major avenue of research reporting

(comprising 39% of the research literature), while college/commercial press publications were a distant second avenue for reporting in the general literature on giftedness.

Insert Table Three About Here.

Additional attention was spent on analyzing the content of the research-based articles cited. Categories of research design were defined by Borg & Gall's (1983) designations. These classifications included: (1) quasi-experimental; (2) review of research (meta-analysis); (3) protocol analysis (content analysis, discourse analysis); (4) survey; (5) case study; (6) correlation/regression/discriminant analysis); (7) causal-comparative; and, (8) factor analysis. Since many research studies represented more than one type of design, classification was by the design that most clearly matched the initial description of the purpose of the study. If this was not immediately evident in the study description, then the design was coded by the first procedure described in the "Method" section of the paper. Table Four shows the frequencies and percentages of design types for the 870 research-based citations. A Chi square analysis indicated that significantly more causal-comparative and correlational designs were used during this period. A trend analysis revealed, however, a significant increase in causal-comparative and case study designs during the latter half of the decade.

Insert Table Four About Here.

Study sample ages were also categorized into six mutually exclusive levels, according to the descriptions of each study method. Thus, even though some age levels overlap by category, if the study did not include all levels within a category, it was allocated to a separate category. The six age levels were: (1) preschool; (2) elementary; (3) secondary; (4) K-12; (5) college and adult; and (6) all ages. As Table Five shows, the significant majority of the studies were conducted with elementary gifted students.

Insert Table Five About Here.

Discussion

The discussion will be organized by the major findings that resulted from this analysis of the literature.

FINDING ONE: Only 20% of the gifted literature is research-based.

I have more questions than discussion of this finding. For instance, is this a "normal" proportion across most educational fields? I have been told that this is very similar to the field of Special Education. A second question might be, is this a substantial decrease from the ratio of research to non-research in previous decades? This is obviously another study for someone interested in historical research. My hunch is that we are seeing many more non-research based publications today. Even more than generally decrying the meagre percentage of research-based publications would be the need to emphasize the necessity for well-developed "think pieces" as the means for exploring new

directions and for sharing successful strategies and techniques. It would be helpful, however, to insure that we shore up our field with a solid, ever-expanding research base.

FINDING TWO: ECER is best for general literature and PSYC is best for research citations.

This finding was very surprising to me. In my own mind I had viewed ERIC as the primary search source and it didn't turn out that way. This does help us get a handle on where to go when we need particular questions answered. There are, obviously, times when we want to look at the "whole" literature -- what does the field say to us, for example, about the social and affective needs of gifted children, AND there are times when we are more likely to want to look only at research.. In effect, we may even have different readerships for our literature. For example, school principals, college faculty outside their area of expertise, and general clasroom teachers may need nothing more than our think pieces and state of the art publications. Knowing who our audience may be and what might be their concerns or need to know, may help us focus our publishing more.

FINDING THREE: The non-research literature is concerned with curriculum quality and program development, while the research is more concerned with student characteristics and identification measures.

This finding of the study definitely gives us more direction on where to go for information on specific topics and how much credence to place on what we are reading. When we decide to search for information on a topic and know why we need to know certain information, it is hoped this study will make it more

easy to go to the appropriate database source. For opinions and people's thinking on an issue, ECER is good, especially when we are involved in curriculum and programs. For information on characteristics or identification, ECER and PSYC are probably our best sources.

FINDING FOUR: Journals comprise the majority of publications in the gifted field.

I am sure this was not a surprising finding for anyone here. What was surprising to me was the great percentage of research in our field that is and has been produced by doctoral students -- what we may call our unpublished literature. Much controversy reigns in the research review field currently about which publications should be included in a process such as meta-analysis. Glass, for example argues that all published studies should be incorporated, regardless of strength or sample size. Others, such as Light & Pillemer (1982), have been concerned about publication bias, arguing that most APA and AERA journals do not accept for publication studies with nonsignificant findings. Thus, effect size is practically guaranteed when meta-analysis is used with only published studies. Slavin (1986), as have Cooper & Arkin (1981), has argued that unpublished research must also be considered in a research synthesis and that each study, published or unpublished, must be ocnsidered on the merits of stength of study design, sample size, and minimization of threats to validity. Slavin's arguments are important for us in gifted studies, especially when we have 39% of our research based in doctoral dissertations.

FINDING FIVE: The most common research designs were causal-comparative, followed by correlational and case study.

My questions concerning this finding have to do with our current directions for research. Are there some directons, such as metacognition, new conceptions of intelligence and giftedness, that preclude the more traditional, quantitative designs? Furthermore, in dealing with a small number of individuals at one end of an IQ continuum, is a qualitative approach, or at least a nonparametric approach more appropriate? Should we be looking to some of the newer methods called for by Bruce Shore and Margaret Anderson?

My general impressions in looking at the frequencies of study design, number of variables studied, and sample size, are that we have done a fairly creditable job in matching our designs to our study questions over the past decade, BUT our focus appears to be changing,k and that may mean that our designs need to be changed too.

FINDING SIX: The most frequently researched group was elementary aged gifted children, comprising nearly half of all research studies.

It is apparent that we need a more balanced picture of the gifted, from birth to old age. Too often, we appear to have chosen the readily available elementary samole, instead of other formative stages of development.

There are several limitations to this preliminary analysis of the gifted literature for the years, 1975-1986. First, counts don't tell the whole picture. We have had some marvelously inventive studies lodged under traditional study designs,

especially in the area of cognitive development; for example, Ludlow and Woodrum's (1982) work on "front end analysis", using Mastermind boards, and Bernice Wong's (1982) research on strategy selection, using story cue cards. Secondly, manual searching might have produced additonal citations. Every time I go through the resource myself instead of relying on a computer search alone, I find new articles in more obscure journals. In this case I had to set some limits for my massive analysis and thus limited it to the articles the computer could find.

A third limitation of this study must be that there is no evaluation of design strengths and weaknesses. My next step will be to study the threats to validity and the generalizability of the 870 studies located as research-based. I hope to be able to report to you again soon on that analysis. A final limitation is that there was no specific focus on research questions addreseed within each topic category. Today I have only described the genral topics or categories that have occurred in the literature. It is obvious that a category such as cognitive characteristics will deal with a host of questions on cognitive style, psychometric versus Piagetian development, information processing strategies, and the interactive effects of affective , social and psychological with cognitive in making the gifted learner quantitatively, and perhaps, qualitatively different.

Only by becoming aware of the research topics on giftedness already adequately addressed by researchers, can we hope to go forward with appropriate research in the future. Of great concern as this research analysis was conducted was the small percentage of total publications which were research- based.

This preliminary analysis has been concerned primarily with the kinds of research that were conducted in the 1975-1986 period. Further analysis will evaluate the quality of these studies and how well individual research questions within each topic have been addressed. At first glance on this future study, however, it seems apparent that researchers in the gifted field have not kept current in their selections of designs to answer questions or test hypotheses dealing with 1980's issues in gifted education, namely issues of cognitive processing, changing conceptions of giftedness, problem solving, and metacognition. There is a continued reliance on the more traditional designs even when operationalizing some of the newer variables of creativity and problem solving, such as "nonentrenchment", "front end analysis", "transfer", and "retrieval cue selection." An important question for researchers in this field to consider is whether or not we are merely reconfirming what we have previously suspected about gifted learners rather than making new discoveries about human intelligence and giftedness.

In this preliminary content analysis, it is painfully evident that no real understanding of gifted development has been obtained and probably will not be until more focus is placed on studies involving preschoolers, adolescents, and adults. Likewise, it is becoming increasingly necessary to focus research on a few topics and explore answers in depth, rather than pursue questions across such diverse areas as psychological development, creativity, computers and technology, and curriculum quality, Furthermore, only by facing the limitations of present research

methodology and the potential overuse of some research designs in the gifted field, can we hope to go forward with well-designed future research. It is hoped that the analysis undertaken in this study may contribute to a reassessment of the value of research in general across the entire field of gifted education.

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Table 1 Frequencies and percentages of non-research and research-based publications from January, 1976 - December, 1986.

Total Citations		2,680
ERIC	840	
ECER	985	
PSYC	855	

	Non-Research Citations		Research Citations	
	n	%	n	%
ERIC	709	39%	131	15%
ECER	876	48%	109	13%
PSYC	225	12%	630	72%
TOTAL*	1810	80%	870	20%

*These percentages reflect total literature of 2,680 citations.

Table 2. Category frequencies and percentages for non-research and research-based publications.

Category	Non-Research Publications		Research-Based Publications		Total
	n	%	n	%	
Computers/Technology	37	2	2	-	39
Teacher Perceptions of Students Student Perceptions of Teachers	115	6	43	5	158
Curriculum Quality	327	18*	18	2	335
Acceleration	23	1	8	-	31
Program Spending/Planning	180	10	32	4	212
Females/Career Counseling	88	5	25	3	113
Social/Emotional Development Family Relationships	253	14*	98	10	351
Cognitive Characteristics	114	6	225	29*	339
Identification/Testing	150	8	157	18*	307
Creativity	136	8	33	4	169
Early Childhood	31	2	4	--	35
Program Treatment	217	12*	163	19*	388
Special Populations	40	2	40	4	80
Educational Strategies	62	3	11	1	73
Teacher/Training Qualifications	37	2	11	1	48

Table 3. Publication sources for non-research and research-based citations

Source	Non-Research Publications n	%	Research-Based Publications n	%	Total
Journal	1639	91*	447	51*	2086*
Government Report	17	--	4	--	21
Conference Paper	15	--	22	--	37
State/School District Report	57	3	24	2	81
College/Commercial Press	82	5	37	5	119
Doctoral Dissertations	--	--	33	39*	336

* p. < L.05

Table 4. Research design types for all citations 1975-1986.

Design	n	%
Quasi-Experimental	46	5
Review of Research/Meta-Analysis	81	9
Protocol, Content, Discourse Analysis	29	3
Survey	114	13
Case Study	144	17
Correlation/Regression/ Discriminant Analysis	194*	22
Causal-Comparative	246*	28
Factor Analysis	16	2
Total	870	100%

Table 5. Frequencies and percentages of research study samples at each age level.

Age Level	n	%
PRESCHOOL	61	7
ELEMENTARY	413	46
SECONDARY	104	12
K-12	165	19
COLLEGE/ADULT	101	12
ALL AGES	26	3
TOTAL	**870**	**100**